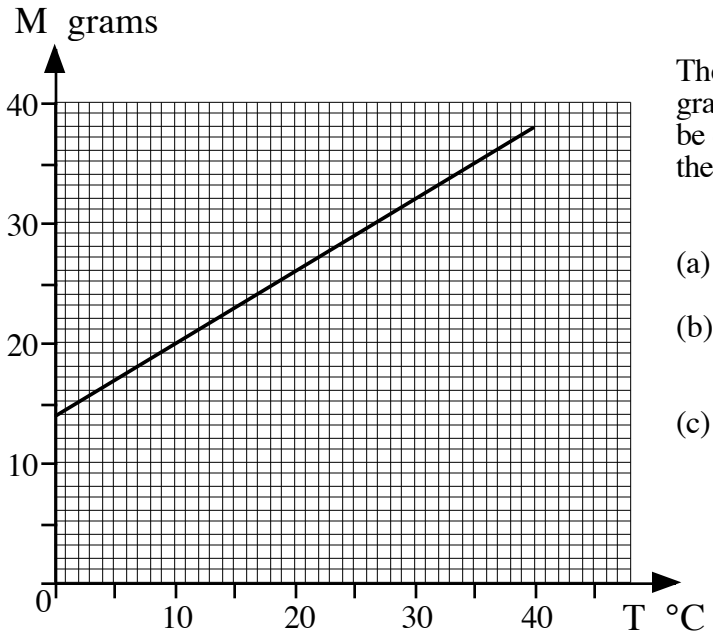
HOME EXERCISE 12

Set out carefully all appropriate working.

1.



The graph shows the number of grams , M , of a substance that can be dissolved in a litre of water when the temperature of the water is T °C.

(a) Find the gradient of the line. (2)

(b) State the equation of the line in terms of M and T. (2)

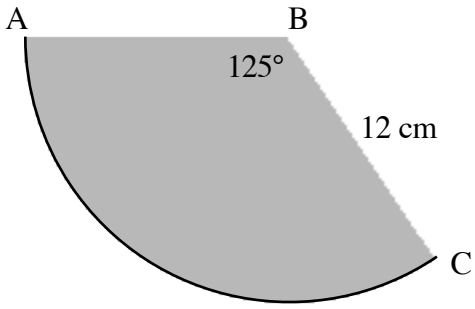
(c) Use the equation to calculate the number of grams of the substance that will dissolve in a litre of water when the temperature is 60°C. (2)

2. If $f(x) = 3x + 6$,
write expressions for and simplify fully: (a) $f(a+2)$ (1)

(b) $f(a-2)$ (1)

(c) $f(a+2) - f(a-2)$ (1)

3.



The diagram shows the sector of a circle radius 12 centimetres.
Angle ABC is 125°.

Calculate: (a) the length of arc AC. (3)

(b) the area of sector ABC. (3)

4. Solve the inequality: $5p - 1 < 3p + 9$ (3)

5. Factorise **fully**: $4t^3 - 9t$ (2)

Total 20 marks